



# *United Kingdom of Great Britain and Northern Ireland*

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BS NA EN 1998-5 (2004) (English): UK National Annex to Eurocode 8. Design of structures for earthquake resistance. Foundations, retaining structures and geotechnical aspects

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*Nulli vendemus, nulli negabimus aut differemus Rectum aut Justiciam.*  
*We will sell to no man, we will not deny or defer to any man either Justice or Right.*

MAGNA CARTA (1297)

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**NATIONAL ANNEX**

# **UK National Annex to Eurocode 8: Design of structures for earthquake resistance –**

**Part 5: Foundations, retaining  
structures and geotechnical aspects**

ICS 91.120.25



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## Summary of pages

This document comprises a front cover, an inside front cover,  
pages i and ii, pages 1 to 3 and a back cover.



# National Annex (informative) to BS EN 1998-5:2004, Eurocode 8: Design of structures for earthquake resistance – Part 5: Foundations, retaining structures and geotechnical aspects

## Introduction

This National Annex has been prepared by BSI Subcommittee B/525/8, *Structures in seismic regions*. In the UK it is to be used in conjunction with BS EN 1998-5:2004.

### NA.1 Scope

This National Annex gives:

- a) the UK decisions for the Nationally Determined Parameters described in the following subclauses of BS EN 1998-5:2004:  
     3.1(3)  
     4.1.4(11)  
     5.2(2)c
- b) the UK decisions on the status of BS EN 1998-5:2004 informative annexes;
- c) references to non-contradictory complementary information.

### NA.2 Nationally Determined Parameters

UK decisions for the Nationally Determined Parameters described in BS EN 1998-5:2004 are given in Table NA.1.

Table NA.1 **UK values for Nationally Determined Parameters described in BS EN 1998-5:2004**

Subclause	Nationally Determined Parameter	Eurocode recommendation	UK decision
3.1(3)	Partial factors for material properties.	$\gamma_{cu} = 1,4$ $\gamma_{tcy} = 1,25$ $\gamma_{qu} = 1,4$ $\gamma_{\phi'} = 1,25$	Use the recommended values.
4.1.4(11)	Ratio $\lambda$ of upper stress limit for susceptibility to liquefaction to critical stress known to have caused liquefaction in previous earthquakes.	$\lambda = 0,8$	Use the recommended value. Further guidance is given in PD 6698.
5.2(2)c)	Minimum ratio $p$ of peak ground acceleration with depth to the product $\alpha \cdot S$ at the ground surface.	$p = 0,65$	Use the recommended value.

## **NA.3 Decisions on the status of the informative annexes**

### **NA.3.1 Topographical amplification factors [BS EN 1998-5:2004, Annex A]**

BS EN 1998-5:2004 informative Annex A may be used in the UK. See also PD 6698.

### **NA.3.2 Pile head static stiffness [BS EN 1998-5:2004, Annex C]**

BS EN 1998-5:2004 informative Annex C may be used in the UK as an informative annex.

### **NA.3.3 Dynamic soil structure interaction [BS EN 1998-5:2004, Annex D]**

BS EN 1998-5:2004 informative Annex D may be used in the UK as an informative annex.

### **NA.3.4 Seismic bearing capacity of shallow foundations [BS EN 1998-5:2004, Annex F]**

BS EN 1998-5:2004 informative Annex F may be used in the UK as an informative annex.

## **NA.4 References to non-contradictory complementary information**

The following is a list of references that contain non-contradictory complementary information for use with BS EN 1998-5:2004.

- PD 6698:2008, *Background paper to the UK National Annexes to BS EN 1998-1, BS EN 1998-2, BS EN 1998-4, BS EN 1998-5 and BS EN 1998-6*;
- *Manual for the seismic design of steel and concrete buildings to Eurocode 8*. Institution of Structural Engineers, London. In draft; publication expected 2008.



# Bibliography

## Standards publications

BS EN 1998-5:2004, *Eurocode 8 — Design of structures for earthquake resistance — Part 5: Foundations, retaining structures and geotechnical aspects*

PD 6698:2008, *Background paper to the UK National Annexes to BS EN 1998-1, BS EN 1998-2, BS EN 1998-4, BS EN 1998-5 and BS EN 1998-6*

## Other publications

- [1] Institution of Structural Engineers: *Manual for the seismic design of steel and concrete buildings to Eurocode 8*, London: publication expected 2008.

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